Fundamentals of Computer Network Security Specialization [1]

About This Specialization

This specialization in intended for IT professionals, computer programmers, managers, IT security professionals who like to move up ladder, who are seeking to develop network system security skills. Through four courses, we will cover the Design and Analyze Secure Networked Systems, Develop Secure Programs with Basic Cryptography and Crypto API, Hacking and Patching Web Applications, Perform Penetration Testing, and Secure Networked Systems with Firewall and IDS, which will prepare you to perform tasks as Cyber Security Engineer, IT Security Analyst, and Cyber Security Analyst.

The learning outcomes of this specialization include:

- You should be able to create public/private keys, certificate requests, install/sign/verify them for web server and client authentication, secure emails, and code signing.
- You should be able to write secure web apps with Crypto API to implement the confidentiality, integrity, and availability basic security services.
- You should be able to hack web applications with vulnerabilities and patch them.
- You should be able to apply penetration testing tool to exploit vulnerable systems.
- You should be able to crack passwords given the hashes in password file using AWS P2 GPU.
- You should be able to configure firewall and IDS for secure network systems
- You should be able to specify effective security policies and implement efficient enforcement procedures by applying security design principles for securing network

systems.

4 Courses

Follow the suggested order or choose your own.

Projects

Designed to help you practice and apply the skills you learn.

Certificates
Highlight your new skills on your resume or LinkedIn.

Projects Overview

With the learner's cloned instance from my AWS image, our Project 1a-d integrate the security principles and knowledge covered in first MOOC and apply them in real world tasks using state of art tools, such as gpg for signing and verifying documents/open source software packages, misc/CA scripts for performing CA certificate signing tasks, generate server/client certificates, and setup on apache web server for secure web access with mutual authentication. Project2a-b cover the use of OpenSSL for encrypting/decrypting data, and Diffi-Hellman key exchange. The related lectures cover the development of secure programs using Crypto API. Projects 3a-b cover hacking and patching with command injections and SQL injections. Project 3c cover cracking Linux passwords with hashcat using AWS P2 GPU instance. Project 4a-b cover the construction of DMZ firewall system with iptables to provide DNAT, masquerade services, filtering packets to secure serves in two AWS virtual private clouds.

For More Information or to Enroll [2]

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